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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Rafael Carbunaru

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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/609,449	Applicant(s) CARBUNARU ET AL.	
	Examiner MICHAEL KAHELIN	Art Unit 3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-21 and 44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-21 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 45-61 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/25/2008.
2. Applicant's election without traverse of claims 1-6, 8-21, and 44 in the reply filed on 3/25/2008 is acknowledged.

Claim Objections

3. Claim 1 is objected to because of the following informalities: "when is it depleted to zero volts" should read "when it is depleted to zero volts." Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The rejection under 35 U.S.C. 112(2) of the previous Office Action have been obviated.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 2, 4, 9, 17, 20, 21 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Schulman et al. (US 2003/0078634, hereinafter "Schulman"), or in the alternative, under 35 U.S.C. 103(a) as being obvious over Schulman in view of Mann et al. (US 4,082,097, hereinafter "Mann").

9. In regards to claim 1, Schulman discloses a base station (162), a coil connected to the base station (158); first and second circuitry for driving the coil as a charging coil or communication coil (par. 0007); and a second, different "booster coil" with third circuitry different from the first circuitry (Fig. 8). The Examiner takes the position that the third circuitry is inherently different from the first circuitry because it is controlling a

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distinct charging coil. For instance, the electrical path that connects the second coil to the control circuitry is "different from" the electrical path that connects the first coil to the control circuitry. Further, the Examiner takes the position that the second coil of Schulman's invention inherently meets the limitation of "is used to recover the rechargeable battery when it is depleted to zero volts" because this is merely functional language limiting the structure of the coil. As Schulman's coil is capable of generating a charging current by induction, it would be capable of recharging a battery discharged to zero volts, depending on the particular circuitry of the implantable device. Please note that there is no positive recitation of the device or battery. In the alternative, Schulman discloses the essential features of the claimed invention except for explicitly disclosing that the booster coil is used to recharge a battery depleted to zero volts. Mann teaches a device having a coil that provides a variable charging rate based on the charge status of the battery and further teaches providing a charging rate "independent of its state-of-charge," (col. 3, lines 30-33) indicating that the coil is capable of charging when the battery is at any voltage, including zero, to provide the predictable result of providing adequate and safe charging (col. 3, line 3). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Schulman's invention by providing a booster coil used to recharge a battery depleted to zero volts to provide the predictable result of providing adequate and safe charging.

10. In regards to claim 2, Schulman's device is configured for forward/back FSK telemetry (par. 0029).

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11. In regards to claim 4, the system further comprises a current measuring circuitry (par. 0025). Although Schulman discloses that the battery current is measured, the coil current is also measured because the current to the battery is delivered by the coil.

12. In regards to claim 17, Schulman discloses a speaker (see US 6,185,452, incorporated by reference into Schulman's disclosure).

13. In regards to claim 20, the stimulator is an implantable microstimulator with a maximum length of about 3.5 cm and a maximum width of about 5 mm (see US 6,315,721, which is incorporated by reference into Schulman's disclosure).

14. In regards to claim 21, the system comprises a sensor for detecting power levels in the coil (in the form of power level detected in the implanted device), and a variable output power source that is contained in the base station and automatically adjusts downwards when the sensor detects power levels that exceed predetermined levels (par. 0026).

15. In regards to claims 9 and 44, Schulman discloses the essential features of the claimed invention except for explicit disclosure of an automatic power shut-off circuitry that shuts off power to the coil when power consumption exceeds a threshold.

However, Mann teaches shut-off circuitry that shuts off power to the coil when power consumption exceeds a threshold (col. 8, lines 44-46) to provide the predictable results of avoiding damage to the battery or injury to the patient. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Schulman's invention by providing shut-off circuitry that shuts off power to

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the coil when power consumption exceeds a threshold to provide the predictable results of avoiding damage to the battery or injury to the patient.

16. Claims 3, 8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman (or Schulman in view of Mann). Schulman (or Schulman in view of Mann) discloses the essential features of the claimed invention including providing the coils in a chair pad (Fig. 4), but does not expressly disclose OOK telemetry, a coil having two layers of 3 turns each, a coil having 24 turns around a 200 mm spool, a chair pad comprising polyurethane or a PCB, or a slip cover over the chair pad. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the charging system as taught by Schulman with the OOK telemetry, a coil having two layers of 3 turns each, a coil having 24 turns around a 200 mm spool, a chair pad comprising polyurethane or a PCB, or a slip cover over the chair pad because applicant has not disclosed that OOK telemetry, a coil having two layers of 3 turns each, a coil having 24 turns around a 200 mm spool, a chair pad comprising polyurethane or a PCB, or a slip cover over the chair pad provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the system as taught by Schulman (or Schulman in view of Mann) because both telemetry protocols effectively transmit the data necessary for operation, both coils have the number of turns and diameter necessary to effectively charge the implanted device, and both chair pad materials effectively support the coil structures. Therefore, it would

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have been an obvious matter of design choice to modify Shulman's (or Schulman in view of Mann's) invention to obtain the invention as specified in the claims.

17. Additionally, it is well known in the art to provide charging devices in chair pads having slip covers and low voltage and current values to allow movable placement with a soft, washable surface, and to avoid high-power coils that can potentially generate large amounts of heat. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Schulman's (or Schulman in view of Mann's) invention with a charging device in a chair pad having a slip cover and low voltage and current values to allow movable placement with a soft, washable surface, and to avoid a high-power coil that can potentially generate large amounts of heat.

18. Claims 5, 6, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman (or Schulman and Mann) in view of Zarinetchi et al. (US 2003/0171792, hereinafter "Zarinetchi '792"). Schulman (or Schulman and Mann) discloses the essential features of the claimed invention, including automatically shutting off power to the coil (par. 0026) and chair pad (Fig. 4), but does not disclose that a temperature sensor coupled to a PCB shuts off power or automatically detection disconnection of the chair pad cable. Zarinetchi '792 teaches of providing a heat sensor (par. 0027) to avoid overheating of componentry during charging operations. Further, it is well known in the art to provide PCBs and means to automatically detect the disconnection of cables to provide for notification to reconnect the cable and resume operations on easily manufactured circuits. Therefore, it would have been obvious to

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one having ordinary skill in the art at the time the invention was made to provide Schulman's (or Schulman in view of Mann's) invention with heat sensor to avoid overheating of componentry during charging operations and a means to automatically detect the disconnection of the cable to provide for notification to reconnect the cable and resume operations on an easily manufactured circuit.

19. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman (or Schulman in view of Mann) further in view of Zarinetchi et al. (US 2002/0058971, hereinafter "Zarinetchi '971"). Schulman (or Schulman in view of Mann) discloses the essential features of the claimed invention except for a grounded shield and a housing comprising polyurethane foam with the claimed dimensions. Zarinetchi teaches of providing the primary coil of a charging device with a grounded shield (abstract) to reduce sensitivity to surrounding objects. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Schulman's (or Schulman in view of Mann's) invention with a grounded shield to reduce sensitivity to surrounding objects. Further, it would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the chair pad as taught by Schulman (or Schulman in view of Mann) with the polyurethane and claimed dimensions because applicant has not disclosed that polyurethane and the claimed dimensions provide an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the chair pad as taught by Schulman (or Schulman in view of Mann) because both pads are suitable for a sitting patient and are

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of a size conducive to location over the implanted device. Therefore, it would have been an obvious matter of design choice to further modify Schulman's (or Schulman in view of Mann's) invention to obtain the invention as specified in the claims.

20. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman (or Schulman in view of Mann) further in view of Hahn et al. (US 6,212,431, hereinafter "Hahn"). Schulman (or Schulman in view of Mann) discloses the essential features of the claimed invention except for an impedance matching network utilizing 50-Ohm matching networks. Hahn teaches of providing an external charging device and implantable stimulator with an impedance matching network utilizing 50-Ohm matching networks (col. 7, line 56) to maintain optimal power transfer characteristics. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Schulman's (or Schulman in view of Mann's) invention by providing an external charging device and implantable stimulator with an impedance matching network utilizing 50-Ohm matching networks to maintain optimal power transfer characteristics.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL KAHRELIN whose telephone number is (571)272-8688. The examiner can normally be reached on M-F, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George R Evanisko/
Primary Examiner, Art Unit 3762

/Michael Kahelin/
Examiner, Art Unit 3762